

METHOD FOR PATTERNING A LAYER OF A LOW DIELECTRIC CONSTANT MATERIAL

ABSTRACT OF THE DISCLOSURE

In a method for patterning a layer of a low dielectric constant material a surface imaging material is applied on a layer of a low dielectric constant material. A pattern is then defined in the surface imaging material. Next, the patterned surface imaging material is hardened so that the patterned surface imaging material functions as a hard mask. If the patterned surface imaging material has silicon incorporated therein, then the material may be hardened by exposure to an oxygen containing plasma. Otherwise, the patterned surface imaging material may be hardened by incorporating silicon into the material, e.g., by silylation, and exposing the material to an oxygen containing plasma. Thereafter, the pattern defined in the surface imaging material is transferred to the layer of the low dielectric constant material.